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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,547	03/30/2001	Sudheer Sirivara	42390P10452	7647

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EXAMINER
LEWIS, MICHAEL A

ART UNIT	PAPER NUMBER
2655	6

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/822,547

**Applicant(s)**

SIRIVARA, SUDHEER

**Examiner**

Michael A Lewis

**Art Unit**

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 7, 12 - 14, 16 - 17 & 28 - 32 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 - 7, 12 - 14, 16 - 17 & 28 - 32 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 5, 12, 13, 14, 28, 29 & 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narayan (US 5717827) in further view of Kochanski et al. (US09772300).

Regarding claims 1, 12, 29 & 32, Narayan discloses a method/system comprising: compressing a set of diphone waveforms into a set of diphone residuals, generating a set of linear predictive coding (LPC) coefficients, using an encoder wherein the generating of the LPC coefficients is performed while compressing the diphone waveforms; storing the set of diphone residuals and the set of LPC coefficients in a compressed packet (Fig 4, Col 5, Line 35 – 55, Col 6, Lines 52 – Col 7, Lines 45); locating the requested diphone residual (Col 3, Lines 27 – 34); extracting the located diphone residual from the set of diphone residuals (Col 10, Lines 38 – 45); supplying the diphone residual to the waveform synthesizer on the client to produce the particular speech output (Col 10, Lines 46 – 60).

Narayan does not disclose receiving a request from a waveform synthesizer residing on a client for a diphone residual for a particular speech output or supplying the diphone residual to the waveform synthesizer on the client to produce the particular speech output. However, Kochanski et al. disclose a server/client system receiving a request from a waveform synthesizer residing on a client for a diphone residual for a particular speech output or supplying the diphone residual to the waveform synthesizer on the client to produce the particular speech output (Fig 2, Paragraph 52 and Paragraph 65). Diphone i.e. phoneme-to-phoneme transitions that reside on a client (e.g. cell phone, PDA) provide natural sounding text to speech synthesis on a mobile device.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify Narayan with the use of diphone residual as a synthesizer residing on a client as taught by Kochanski et al. provides a more natural sound speech synthesizer.

Regarding claim 2, Narayan discloses the method comprising: compressing the set of diphone waveforms into the set of diphone residuals using an encoder (Fig 3, Col 5, Line 51 – 55); and decompressing the extracted diphone residual (Col 10, Lines 26 – 36).

Regarding claim 3, Narayan discloses comprises supplying the encoder-

generated LPC coefficients to the waveform synthesizer (Col 10, Lines 61 – 64).

Regarding claim 4, Narayan discloses a method comprise supplying pitch marks to the waveform synthesizer (Col 10, Line 45).

Regarding claim 5, Narayan does not disclose the waveform synthesizer to produce the particular speech output on the client, the client including a handheld device. However, Kochanski et al. disclose the waveform synthesizer to produce the particular speech output on the client, the client including a handheld device. The use of waveform synthesizer on a client handheld device provides a more natural sounding speech synthesizer on a mobile device.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify Narayan with the use of diphone residual as a synthesizer residing on a client handheld device as taught by Kochanski et al. provides a more natural sounding speech synthesizer on a mobile device.

Regarding claim 13, Narayan does not disclose a system server further comprises: a text analysis module for processing a text into forms of linguistic representations; a linguistic and prosodic analysis module for

analyzing the forms of linguistic representations corresponding to their assigned language system. However, Kochanski et al. teach a system server further comprises: a text analysis module for processing a text into forms of linguistic representations (Fig 2(21)); a linguistic and prosodic analysis module for analyzing the forms of linguistic representations corresponding to their assigned language system (Fig 4(22,42,32)). The function performed by the text and prosodic analysis executed on a server is necessary for efficient text-to-speech synthesis on portable devices.

Therefore, it would have been obvious to one of ordinary skill at the time of invention to modify Narayan with the use of text and prosodic analysis modules as taught by Kochanski et al. provides a more natural sounding speech synthesizer on a mobile device.

Regarding claims 14 & 28, Narayan disclose the concatenative speech database further comprises: diphone waveforms pitch marks (Col 10, Lines 57 – 64).

3. Claims 6, 7, 16, 17, 30 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narayan (US 5717827) in view of Yong et al. (US 5867814).

Narayan does not disclose the use of a G. 723 encoder or decoder.

However, Yong teaches the use of a G. 723 compliant encoder and decoder. G.723 specification is a standard developed by the International Telecommunication Union (ITU) for the process of standardizing a dual-rate digital speech coder for multimedia communications.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Narayan with use of a G.723 compliant coder as taught by Yong since it would have resulted in more efficient TTS processing.

Regarding claims 6, 7, 16, 17, 30 & 31, Narayan discloses the method comprising: compressing the set of diphone waveforms into the set of diphone residuals using an encoder (Fig 3, Col 5, Line 51 – 55); and decompressing the extracted diphone residual (Col 10, Lines 26 – 36).

Narayan do not disclose that the encoder includes a G.723 encoder.

However, Yong teaches the use of a G. 723 compliant encoder and decoder. G.723 specification is a standard developed by the International Telecommunication Union (ITU) for the process of standardizing a dual-rate digital speech coder for multimedia communications.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Narayan with use of a G.723 compliant coder as

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taught by Yong since it would have resulted in more efficient TTS processing.

***Response to Arguments***

4. Applicant's arguments filed 4-13-04 have been fully considered but they are not persuasive. The new and amended claim language's main arguments are addressed by the combination of Narayan and Kochanski. The combination teaches a server/client system receiving a request from a waveform synthesizer residing on a client for a diphone residual for a particular speech output or supplying the diphone residual to the waveform synthesizer on the client to produce the particular speech output (Fig 2, Paragraph 52 and Paragraph 65).
5. Applicant's arguments with respect to claims 1 – 7, 12 –14,16 & 17 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory



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period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Coorman et al.	(US6665641)
Gigi	(US6453383)
Huang et al.	(US6553375)
Kivimaki	(US Application 20010014860)
Foti et al.	(US5774855)
Kandefer et al.	(US5153913)
Freeland et al	(US Application 20030028380)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A Lewis whose telephone number is 703 305-8730. The examiner can normally be reached on Regular.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (703) 305-4827. The fax

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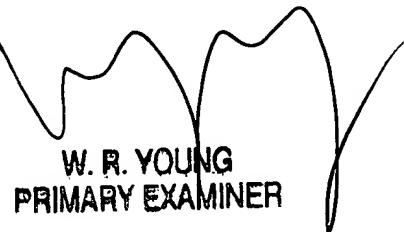
phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lewis A Michael  
Examiner  
Art Unit 2655

Mal

7/6/2004



W. R. YOUNG  
PRIMARY EXAMINER